

MEMORANDUM

STATE WATER CONTROL BOARD

OFFICE OF ENVIRONMENTAL RESEARCH AND STANDARDS

4900 Cox Road Glen Allen, Virginia 23060

SUBJECT: New Standards - Interpretations

TO: M. Dale Phillips, OWRM

FROM: Elleanore Daub and Jean Gregory, OERS

DATE: February 24, 1992

COPIES: Alan J. Anthony, Alex Barron, OERS; Larry Lawson, Martin Ferguson, Fred Holt, OWRM

This is in response to the questions you raised in your February 3, 1992 memo about implementation of the new water quality standards.

Question: Is the 3 year period mentioned a recurrence interval or a simple numerical requirement?

Is the 4 day average concentration a running average, a discrete average, or an extreme event?

We have discussed your question about whether 4B3 means "on the average" with Tom Henry of EPA III. His interpretation was the same as that provided on pages 58444-5 of the November 19, 1991 issue of the Federal Register (vol 56, no. 223) for the proposed rule on amendments to the water quality standards regulations for compliance with CWA section 303(c)(2)(B). Either the 7Q10 or the 4B3 low flow value can be used for chronic aquatic life criteria applied to streams and rivers. If you decide to use a 4 day 3 year biologically based flow, EPA has a program called DFLOW that can be accessed through STORET as WQAB DFLOW which will calculate the biologically based flows using USGS flow data. EPA's Technical Support Document referenced DFLOW computer program should be used rather than devising your own statistical method for calculating 4B3.

Question: Is the intent of the mixing zone standard to apply to all discharges and thereby protect all stream segments or is it to apply only to those dischargers that have a mixing zone specified in their permit?

The intent is for mixing zone requirements to apply to all discharges within a stream segment not meeting beneficial uses. In other words, if a problem with use attainment is noticed (such as no zone of passage or a discharge encompassing a fish nursery area or shellfish beds), the mixing zone should be defined and

regulated in the permit. Otherwise, it would be appropriate to continue issuing discharge permits as we have in the past with the recognition that an unofficial mixing zone was present that still allowed the attainment of all beneficial uses. In areas where we recognize a mixing zone should be regulated, limiting the zone to 1/3 the cross section is acceptable.

Question: Is the typical cross section drawing a correct interpretation of the mixing zone standard?

The drawing would be correct only if there were no biological considerations/requirements placed in the mixing zone policy. Remember, there must be a zone of passage and all the requirements of the General Standard must be met. Your example violates both of these biological considerations and one or both of the mixing zones would have to be reduced in size or moved.

Question: Are the critical low flows listed in the "Stream Application: Stream Flow" section refer to the method used to calculate flows, the method used to calculate wasteload allocations (if so what method?) or does it simply refer to interpreting monitoring data?

For human health the critical low flows referenced in the standard should only be used for steady state modeling. For aquatic life standards, critical low flows are to be applied the same way we have historically applied the 7Q10. In other words, the 7Q10 or 1Q10 should be used for steady state modeling. In situations where another statistical method is selected for application of aquatic life standards, we are undecided whether these critical low flows still apply. This is one of the issues we have asked the SAC subcommittee on flows to address.

Question: This part goes on to say that the valid statistical methods referred to must be "shown to protect aquatic organisms." Does this mean compliance with the numerical standards?

Yes.